(12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(19) World Intellectual Property Organization
International Bureau

(43) International Publication Date
12 June 2003 (12.06.2003)

PCT

(10) International Publication Number
WO 03/047694 A3

(51) International Patent Classification[7]: A61N 5/10, G01T 1/02

(21) International Application Number: PCT/US02/38111

(22) International Filing Date:
26 November 2002 (26.11.2002)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:

60/334,580	30 November 2001 (30.11.2001)	US
10/303,591	25 November 2002 (25.11.2002)	US

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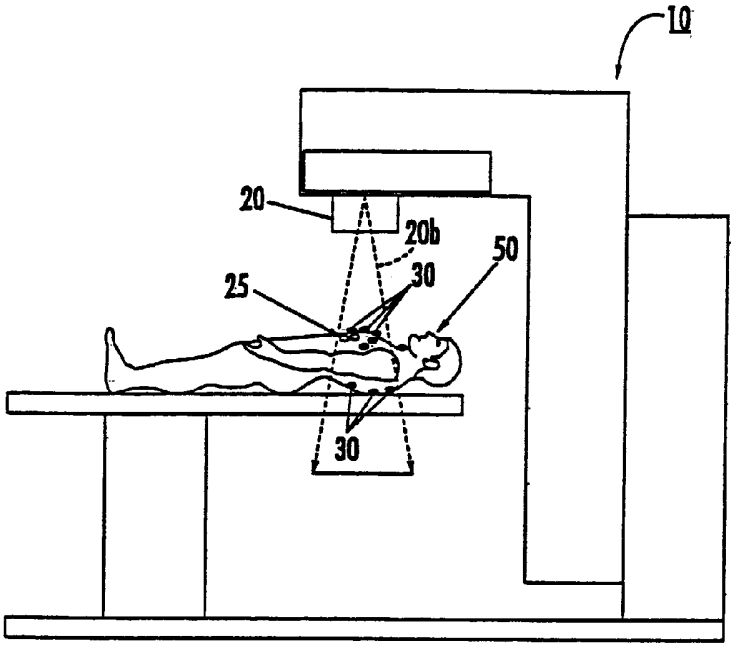
(81) Designated States *(national)*: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, OM, PH, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.

(84) Designated States *(regional)*: ARIPO patent (GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, SK,

[Continued on next page]

(54) Title: DISPOSABLE SINGLE-USE EXTERNAL DOSIMETERS FOR USE IN RADIATION THERAPIES



(57) Abstract: Methods, systems, devices, and computer program products include positioning disposable single-use radiation sensor patches that have adhesive means onto the skin of a patient to evaluate the radiation dose delivered during a treatment session. The sensor patches are configured to be minimally obtrusive and operate without the use of externally extending power chords or lead wires.

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TR), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

Published:

— *with international search report*

— *before the expiration of the time limit for amending the claims and to be republished in the event of receipt of amendments*

(88) Date of publication of the international search report:
9 October 2003

For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

INTERNATIONAL SEARCH REPORT

Application No
PCT/US 02/38111

A. CLASSIFICATION OF SUBJECT MATTER
IPC 7 A61N5/10 G01T1/02

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)
IPC 7 A61N G01T G01R

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)
EPO-Internal, INSPEC

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category °	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	EP 0 471 957 A (THOMSON & NIELSEN ELECTRONIC) 26 February 1992 (1992-02-26) column 2, line 25 - line 31 column 5, line 21 - line 30 column 9, line 9 - line 24 column 11, line 9 - line 41 figures 5,7,8	33-35, 39,44, 46-48,84
Y	---	92,94,95
X	DE 33 32 075 A (LEHNER MAX & CO AG) 22 March 1984 (1984-03-22) page 8, line 12 -page 13, line 4	57,69

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[X] Further documents are listed in the continuation of box C.

[X] Patent family members are listed in annex.

° Special categories of cited documents :

"A" document defining the general state of the art which is not considered to be of particular relevance

"E" earlier document but published on or after the international filing date

"L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)

"O" document referring to an oral disclosure, use, exhibition or other means

"P" document published prior to the international filing date but later than the priority date claimed

"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention

"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone

"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art.

"&" document member of the same patent family

Date of the actual completion of the international search	Date of mailing of the international search report
20 August 2003	-2 09. 2003

Name and mailing address of the ISA	Authorized officer
European Patent Office, P.B. 5818 Patentlaan 2 NL - 2280 HV Rijswijk Tel. (+31-70) 340-2040, Tx. 31 651 epo nl, Fax: (+31-70) 340-3016	Petter, E

C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

Category °	Citation of document, with indication,where appropriate, of the relevant passages	Relevant to claim No.
X	MATHUR V K: "Ion storage dosimetry" NUCLEAR INSTRUMENTS & METHODS IN PHYSICS RESEARCH, SECTION - B: BEAM INTERACTIONS WITH MATERIALS AND ATOMS, NORTH-HOLLAND PUBLISHING COMPANY. AMSTERDAM, NL, vol. 184, no. 1-2, September 2001 (2001-09), pages 190-206, XP004306666 ISSN: 0168-583X the whole document	33-35,84
Y		101-103
A	GB 2 263 196 A (ATOMIC ENERGY AUTHORITY UK) 14 July 1993 (1993-07-14) the whole document	49
A	SOUBRA M ET AL: "EVALUATION OF A DUAL BIAS DUAL METAL OXIDE-SILICON SEMICONDUCTOR FIELD EFFECT TRANSISTOR DETECTOR AS RADIATION DOSIMETER" MEDICAL PHYSICS, AMERICAN INSTITUTE OF PHYSICS. NEW YORK, US, vol. 21, no. 4, 1 April 1994 (1994-04-01), pages 567-572, XP000450828 ISSN: 0094-2405 the whole document	33,57, 69,84
A	BUTSON M J ET AL: "A NEW RADIOTHERAPY SURFACE DOSE DETECTOR: THE MOSFET" MEDICAL PHYSICS, AMERICAN INSTITUTE OF PHYSICS. NEW YORK, US, vol. 23, no. 5, 1 May 1996 (1996-05-01), pages 655-658, XP000592649 ISSN: 0094-2405 the whole document	33,57, 69,84
A	BARTHE J: "Electronic dosimeters based on solid state detectors" NUCLEAR INSTRUMENTS & METHODS IN PHYSICS RESEARCH, SECTION - B: BEAM INTERACTIONS WITH MATERIALS AND ATOMS, NORTH-HOLLAND PUBLISHING COMPANY. AMSTERDAM, NL, vol. 184, no. 1-2, September 2001 (2001-09), pages 158-189, XP004306665 ISSN: 0168-583X Section 6: Transistors	33,57, 69,84
P,X	WO 02 09775 A (MANN GREGORY GLENWOOD ;BLACK ROBERT D (US); SICEL TECHNOLOGIES INC) 7 February 2002 (2002-02-07) page 4, line 9 - line 11 page 5, line 7 -page 6, line 5 page 13, line 16 -page 14, line 16 page 16, line 19 - line 25	33

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C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

Category °	Citation of document, with indication,where appropriate, of the relevant passages	Relevant to claim No.
X	MORENO D J ET AL: "A simple ionizing radiation spectrometer/dosimeter based on radiation sensing field effect transistors (RadFETs)" TRANDUCERS 97. 1997 INTERNATIONAL CONFERENCE ON SOLID-STATE SENSORS AND ACTUATORS. DIGEST OF TECHNICAL PAPERS (CAT. NO.97TH8267), PROCEEDINGS OF INTERNATIONAL SOLID STATE SENSORS AND ACTUATORS CONFERENCE (TRANSDUCERS '97), CHICAGO, IL, USA, 16-19 JUN, pages 1283-1286 vol.2, XP010240717 1997, New York, NY, USA, IEEE, USA ISBN: 0-7803-3829-4 the whole document	89
Y		92-95
A		90

Y	WO 00 40299 A (TAKEDA NABUO ;AHN SUZANNE I (US); HAYS STEVEN R (US); AHN SAMUEL S) 13 July 2000 (2000-07-13) claim 1	93

X	US 4 976 266 A (HUGHES ROBERT C ET AL) 11 December 1990 (1990-12-11) column 10, line 16 - line 43; figure 3	89,91, 94,95

X	TARR N G ET AL: "A floating gate MOSFET dosimeter requiring no external bias supply" RADECS 97. FOURTH EUROPEAN CONFERENCE ON RADIATION AND ITS EFFECTS ON COMPONENTS AND SYSTEMS (CAT. NO.97TH8294), RADECS 97. FOURTH EUROPEAN CONFERENCE ON RADIATION AND ITS EFFECTS ON COMPONENTS AND SYSTEMS (CAT. NO.97TH8294), CANNES, FRANCE, 15-19 SE, pages 277-281, XP002251856 1998, New York, NY, USA, IEEE, USA ISBN: 0-7803-4071-X abstract	89

X	US 5 159 262 A (RUMBAUGH SCOTT H ET AL) 27 October 1992 (1992-10-27) column 1, line 7 - line 27 column 3, line 64 -column 4, line 4	99,100
Y		101-103
A		104

A	US 5 596 199 A (BEAUVAIS W JOSEPH ET AL) 21 January 1997 (1997-01-21) the whole document	99

INTERNATIONAL SEARCH REPORT

ıtional application No.
PCT/US 02/38111

Box I Observations where certain claims were found unsearchable (Continuation of item 1 of first sheet)

This International Search Report has not been established in respect of certain claims under Article 17(2)(a) for the following reasons:

1. [X] Claims Nos.: 1-32
because they relate to subject matter not required to be searched by this Authority, namely:

Rule 39.1(iv) PCT - Method for treatment of the human or animal body by therapy

2. [ ] Claims Nos.:
because they relate to parts of the International Application that do not comply with the prescribed requirements to such an extent that no meaningful International Search can be carried out, specifically:

3. [ ] Claims Nos.:
because they are dependent claims and are not drafted in accordance with the second and third sentences of Rule 6.4(a).

Box II Observations where unity of invention is lacking (Continuation of item 2 of first sheet)

This International Searching Authority found multiple inventions in this international application, as follows:

see additional sheet

1. [ ] As all required additional search fees were timely paid by the applicant, this International Search Report covers all searchable claims.

2. [ ] As all searchable claims could be searched without effort justifying an additional fee, this Authority did not invite payment of any additional fee.

3. [X] As only some of the required additional search fees were timely paid by the applicant, this International Search Report covers only those claims for which fees were paid, specifically claims Nos.:

33-95,99-104

4. [ ] No required additional search fees were timely paid by the applicant. Consequently, this International Search Report is restricted to the invention first mentioned in the claims; it is covered by claims Nos.:

Remark on Protest

[ ] The additional search fees were accompanied by the applicant's protest.

[X] No protest accompanied the payment of additional search fees.

FURTHER INFORMATION CONTINUED FROM PCT/ISA/ 210

This International Searching Authority found multiple (groups of) inventions in this international application, as follows:

1. Claims: 33-88

   Disposable single-use dosimeter patch, dose-reader and computer program therefor

2. Claims: 89-95

   MOSFET radiation sensor without floating gate and/or external voltage

3. Claims: 96-98

   Dose reader with a data port for downloading data to a remote computer

4. Claims: 99-104

   Method of fabricating a plurality of sensor patches

INTERNATIONAL SEARCH REPORT

Information on patent family members

Il Application No
PCT/US 02/38111

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